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**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of )

Amendment of the Commission's )  
Rules to Establish a Radio Astronomy )  
Coordination Zone in Puerto Rico )

ET Docket No. 96-2  
RM-8165

To: The Commission

**COMMENTS**

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## SUMMARY

Puerto Rico Telephone Company ("PRTC") supports the mission of the Arecibo Radio Astronomy Observatory ("Observatory") and is proud that Puerto Rico is home this national resource. Nevertheless, Puerto Rico also is home to a highly developed manufacturing and service economy that requires the same communications and information technology available in the mainland. PRTC opposes the formation of a radio coordination zone in Puerto Rico because these services should not be consigned to a second class radio environment.

As a threshold matter, the Observatory is not without means to protect against potential sources of interference. Puerto Rico law establishes a protection zone for four miles from the Observatory in which no person is permitted to operate electrical devices — including broadcast and communications transmitters — that interfere with the operations of the Observatory. New Puerto Rico regulations also prohibit the use of microwave links that would traverse this four mile protection zone.

Moreover, the Commission's daily releases provide ready information on applications for new services or modified facilities that would occur outside of the Puerto Rico protection zone. The Notice of Proposed Rule Making indicates that Observatory staff routinely watch the Commission's public notices and have undertaken informal coordination measures when proposed facilities might interfere with the Observatory's operations. To the extent that this routine monitoring function is a burden to

the Observatory, the Observatory may subscribe to any of a number of inexpensive services that will alert the staff to pending applications. The Observatory should not shift the limited cost of reviewing Commission public notices to other users of spectrum in Puerto Rico.

Even if a coordination zone was needed in Puerto Rico, the Commission's proposals are not sufficiently detailed to permit meaningful comment. To satisfy the requirements of the Administrative Procedure Act, among other things the Commission must specify what types of "reasonable technical modifications" an applicant would be "required to make" to satisfy the Observatory. As drafted, the Notice of Proposed Rule Making gives no true indication of what new duties would be placed on Puerto Rico spectrum users as a result of this rule making.

The impact of new standardless requirements could be great — particularly with respect to critical telecommunications services. For example, PRTC's use of wireless alternatives to traditional local loops could be delayed during the "reasonable technical modification" portion of the Observatory's application review. Thus, the deployment of a critical local exchange service — one that complies in all respects with the Commission's Rules — will be prevented while the reasonableness of modifications required by the Observatory is assessed. Puerto Rico spectrum users should not be faced with an extra-regulatory approval process that will delay the introduction of telecommunications services.

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To: The Commission

**COMMENTS**

Puerto Rico Telephone Company, by its attorneys and pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. § 1.415, submits these Comments in response to the above-captioned Notice of Proposed Rule Making ("NPRM") released by the Commission on February 8, 1996.

**I. INTRODUCTION**

PRTC supports the mission of Cornell University ("Cornell"), the National Astronomy and Ionosphere Center, and the Arecibo Radio Astronomy Observatory ("Observatory") to study cosmic signals and to explore planetary systems, pulsars, and extraterrestrial life. The work done at the Observatory will contribute substantially to our understanding of the universe and our view of the unfolding intergalactic landscape. PRTC is proud that Puerto Rico is home to this unique national resource.

At the same time, however, other radio services are important to the quality of life in Puerto Rico. From critical wireless local loops alternatives to emergency paging and cellular offerings and government and broadcast services, use of the electromagnetic spectrum in Puerto Rico — just as in the

mainland United States — is permitting more people to communicate and to receive information than ever before. Although Cornell contends that Puerto Rico was a quiet radio environment when the Observatory was constructed in 1960, NPRM at ¶ 6, Puerto Rico today is home to a highly developed manufacturing and service economy that requires the same communications and information technology available in the mainland. The fact that the Observatory is located in Puerto Rico should not consign these critical services to a second class radio environment.

Against this background, PRTC opposes the formation of the radio astronomy coordination zone proposed in the NPRM. Puerto Rico law already protects the Observatory to a great extent and the Commission's daily releases are a cost-effective way of monitoring potential sources of interference outside of the statutorily protected area. Indeed, inexpensive services are available to alert the Observatory to radio applications filed for designated areas. At bottom, Cornell's proposed rules are an attempt to shift the limited costs of reviewing the Commission's public notices from itself to virtually all other users of the electromagnetic spectrum in Puerto Rico.

Moreover, the rules discussed in the NPRM are impermissibly vague as to the standards to be applied by the Observatory in assessing interference and the technical modifications to be required of affected applicants. If left unspecified, this ad hoc coordination provision could create substantial de facto requirements for spectrum users otherwise operating entirely in

accordance with the Commission's Rules. In turn, a standardless coordination zone for all of Puerto Rico would inject a great deal of uncertainty into the licensing and deployment of important new radio services. Although the mission of the Observatory is valuable and unique, it should not be permitted to delay the development of emerging wireless industries or the implementation of existing technologies.

## **II. METHODS TO ADDRESS POTENTIAL INTERFERENCE WITH THE OBSERVATORY ALREADY EXIST**

### **A. Puerto Rico Law Prohibits Radio Operations in the Vicinity of the Observatory**

As a threshold matter, Puerto Rico law prohibits potentially harmful radio operations in a wide area around the observatory. Section 3 of the Radio Astronomy Zoning Act makes it unlawful to operate or cause to operate any "electrical equipment within a radius of four (4) miles from the location of the [Observatory]."

23 L.P.R.A. § 214 (Supp. 1991). The term "electrical equipment" was amended in 1989 to mean:

any machinery, mechanism, instrument, device, or other facility capable of producing electromagnetic emissions which may damage or interfere with the operation or investigations at the Center such as, among others, (a) AM, FM or TV transmitters or repeaters or both, (b) commercial communications transmitters, repeaters or both, (c) arc welding, (d) high voltage transmission or distribution power lines, (e) radio control devices, (f) defective household appliances, (g) diathermic machines, (h) neon signs, (i) high power arc lights; (j) electric motors and generators with brushes, (k) high power microwave industrial equipment and (l) industrial electric controls with electromagnetic wave radiation.

23 L.P.R.A. § 212(4) (Supp. 1991). The protected four mile radius (6.4 kilometers) covers 130 square kilometers, which

comprises approximately 1.5 percent of Puerto Rico's total land area.

In addition, Cornell states that new regulations of the Puerto Rico Planning Board prohibit the use of microwave links that traverse or approach the protected Observatory zone. NPRM at ¶ 7. This means that, at minimum, 1.5 percent of Puerto Rico's total land area is set aside to safeguard the operations of the Observatory.<sup>1</sup> Cornell nowhere demonstrates how this operation free zone established under the Radio Astronomy Zoning Act and Puerto Rico regulations fails to offer the Observatory protection from interference.

**B. The Commission Publishes Information on Applications for New or Modified Station Facilities Every Day**

In addition to the 130 square kilometer protection area established under Puerto Rico law, the Commission publishes information on applications for new or modified station facilities every day. The Commission's daily releases feature public notices that can be used to determine the location, frequency, power, and other technical specifications of proposed facilities. Parties interested in sources of potential radio interference routinely monitor these releases and may raise issues regarding potential interference directly with the applicant or with the Commission. Thus, a ready and convenient

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1. In contrast, the Commission Rules protecting the United States Department of Commerce Observatory near Boulder, Colorado establishes a voluntary protected area of only 1.5 miles in radius. See, e.g., 47 C.F.R. §§ 21.113(b)(1)(i); 22.369(b)(2)(i).



listing of potential sources of interference outside of the 130 square kilometer protected area already exists.

This process does not appear to be foreign to the management of the Observatory. In the NPRM the Commission writes, "Cornell submits that, at present, the Observatory staff must regularly check Commission public notices to determine which applications have been filed for new or modified station facilities in Puerto Rico." NPRM at ¶ 8. Thus, the Observatory staff apparently undertakes the same review conducted by all other interested parties who might experience radio interference.

It is noteworthy that the process of monitoring Commission releases achieves the same results as the proposed coordination zone. According to the Commission, Cornell maintains that reviewing public notices for proposed stations "has been burdensome and is not failproof, citing the example of WCCV-TV, Camuy, Puerto Rico, which received a construction permit from the Commission to modify its facilities without the Observatory's knowledge." Id. (footnote omitted). The Commission continues, "Cornell states that the Commission staff has been apprised of the interference problem with WCCV-TV and informal coordination is taking place to resolve that interference." Id. at ¶ 8 n.12. It seems apparent that a coordination zone covering all of Puerto Rico is not needed when existing Commission resources lead to the

same "informal coordination" — even when Observatory staff fail to read Commission public notices.<sup>2</sup>

Rather than ask to shift the small cost of reviewing the Commission releases from the Observatory to all other spectrum users in Puerto Rico, the Observatory easily could subscribe to any of a number of inexpensive services that will identify and deliver applications filed for wireless services in specified geographic areas. For example, PRTC has determined that Berry Best Services, Ltd. will provide a "Zone Watch" service for all of Puerto Rico. For \$40 per month, Berry Best will monitor the Commission releases and all filings at the Commission for radio applications or modifications in Puerto Rico and will alert Observatory staff of any filings within the staff's specifications.

By subscribing to this service, the Observatory staff will be able to review applications for new or modified services in Puerto Rico efficiently and will be able to file comments on the proposed services along with all other interested parties. The Observatory staff also will be free to undertake the informal coordination process identified in the NPRM as already occurring. Having the Observatory take responsibility for its own needs will

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2. It is odd that, following the submission to the Observatory of applications appearing on public notice, "the Observatory would carry out propagation and other calculations using standard industry-recognized procedures at no cost to the applicant," NPRM at ¶ 15, but finds the task of reviewing Commission public notices "burdensome." Id. at ¶ 8. Reviewing Commission releases for potential sources of interference is, for all other licensees, a "standard industry-recognized procedure."

accomplish the same result as the coordination zone without creating the appearance of a greater entitlement to electromagnetic spectrum use than is afforded by the Commission's Table of Frequency Allocations and Rules.

**III. THE COMMISSION'S PROPOSALS ARE TOO VAGUE TO PERMIT A MEANINGFUL ASSESSMENT OF THE IMPACT ON EXISTING WIRELESS SERVICES**

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**A. The NPRM Does Not Give Sufficient Notice of What Type of Reasonable Technical Modifications Will Be Required For Which Services**

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Even if there was a need for a formal coordination requirement in Puerto Rico, the Commission's proposals do not make clear what type of reasonable efforts would be required to coordinate radio emissions with the needs of the Observatory and for which services those requirements will apply. After applicants submit the technical parameters of a proposed service or modification to the Observatory, the Commission proposes that the Observatory would determine if the potential for "interference" exists and "would attempt to reach an agreement with the applicant to avoid this interference." NPRM at ¶ 21. Then, "[t]he applicant would be required to make reasonable technical modifications to its proposal in order to resolve or mitigate the potential interference problem and to file either an amendment to the application or a modification application if appropriate." Id. (emphasis added). See also id. at ¶ 39 (draft rule). The Commission adds only that an application may be granted after the Applicant has satisfied its responsibility of making reasonable accommodation efforts. Id. at ¶¶ 21, 39.

Section 4(a) of the Administrative Procedure Act ("APA") provides that an agency proposing a new rule must publish, among other things, "the terms or substance of the proposed rule or a description of the subjects and issues involved." 5 U.S.C. § 553(b)(3). It is well established that this notice requirement is not satisfied if an agency publishes a proposed rule in vague or ill-defined terms. Instead, a description of the subjects and issues covered by a proposed rule "must provide sufficient detail and rationale for the rule to permit interested parties to participate meaningfully." Horsehead Resource Development Co. v. Browner, 16 F.3d 1246, 1268 (D.C. Cir. 1994), cert. denied, 115 S.Ct. 72 (1994). See also Chemical Waste Management, Inc. v. United States Environmental Protection Agency, 976 F.2d 2, 28 (D.C. Cir. 1992); Fertilizer Institute v. United States Environmental Protection Agency, 935 F.2d 1303, 1312 (D.C. Cir. 1991); Florida Power & Light Co. v. United States, 846 F.2d 765, 771 (D.C. Cir. 1988). An agency "must describe the range of alternatives being considered with reasonable specificity. Otherwise, interested parties will not know what to comment on, and notice will not lead to a better-informed agency decision-making." Horsehead Resource Development, 16 F.3d at 1268. See also Small Refiner Lead Phase-Down Task Force v. United State Environmental Protection Agency, 705 F.2d 506, 549 (D.C. Cir. 1983).

In Horsehead Resource Development, for example, the United States Court of Appeals for the District of Columbia Circuit

ruled that the Environmental Protection Agency's ("EPA's") notice of a proposed rule was insufficient because it failed to describe the specific standard ultimately adopted for measuring carbon monoxide emissions by certain parties. In particular, the Court said that the EPA could not base notice of the standard on "proposals concerning the individual parts of the ultimate standard." Horsehead Resource Development, 16 F.3d at 1268. In contrast, in Chemical Waste Management the DC Circuit found that the EPA satisfied the notice requirements of the APA when it explicitly stated the substance of a proposed standard — this time for dilution of waste streams — and provided examples of the application of the standard. Chemical Waste Management, 976 F.2d at 28.

In the instant matter, the Commission has not satisfied the notice requirements of the APA. Not only does the Commission expressly decline to establish any standards for determining interference with the operations of the Observatory, NPRM at ¶ 27, there is no discussion in the NPRM of what "reasonable technical modifications" an applicant would be "required to make" to satisfy the Observatory.<sup>3</sup> Although the range of potential

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3. Similarly, the NPRM does not specify which frequencies will truly be affected by the proposed coordination zone and accompanying modification requirements. NPRM at ¶¶ 17, 34. Radio astronomy observations are normally conducted in a narrow frequency range, yet the NPRM proposes to cover radio services across the spectrum — even where the Observatory may conduct only passive experiments. Id. At a minimum, the Commission should require Cornell to indicate specifically which frequencies are most important to its operations, rather than simply to announce that all frequencies are critical.

adjustments to address complaints of interference might be broad in scope and magnitude, the Commission cannot expect commenters meaningfully to participate in this rule making without knowing the nature of the duties that would be required to address that interference.

For example, the Commission reports Cornell's position that while "general filtering and modification of the beam pattern are useful," in the case of broadcast stations "more formal time-sharing could be implemented." NPRM at ¶ 26. It is beyond dispute that this range of "options" is dramatic. Time-sharing would constitute an extraordinary alteration of the operating rights normally afforded to broadcast licensees. Similarly, modification of a station's beam pattern could compromise the integrity of a transmission to the very areas intended to be served under a Commission license. Since the Commission describes no standards in the NPRM, however, it is not clear whether such proposals are under actual consideration by the Commission.

Nevertheless, the Commission's proposals could mean profound changes in the rights of licensees in each of the named services in Puerto Rico. Puerto Rico licensees could satisfy all of the Commission's Rules for applications in a particular service and still encounter regulatory obstacles not faced by licensees in the mainland. Moreover, the uncertainty and delay facing an applicant that failed inadvertently on a particular occasion to deliver its specifications to the Observatory could be great —

even if the application truly was of no interest to the Observatory. Rule changes of such magnitude cannot and should not be raised in oblique fashion in this type of proceeding.

At bottom, the Commission must spell out specifically what will and will not constitute "reasonable technical modifications" and "reasonable efforts to accommodate the Observatory" before parties may truly assess the costs to be imposed by Cornell's request and the Commission's proposals. Insofar as the completion of "reasonable" modifications or efforts would impose a new requirement in the wireless service application approval process for Puerto Rico, notice of the elements and scope of this standard is imperative. In the current NPRM, however, the Commission has "failed to give interested parties sufficient notice of the form that the [modification] standard might take." Horsehead Resource Development, 16 F.3d at 1268.

**B. Standardless Veto Rights Will Delay the Deployment of Critical Wireless Services**

In the absence of meaningful standards and limitations, the Observatory's participation in the licensing process will delay efforts to deploy critical wireless services for the citizens of Puerto Rico. By permitting the Observatory to impose undefined modification requirements on applicants, the Commission would be appending an additional layer to the existing regulatory approval process. That additional layer could mean unpredictable delay for a new or modified service that complies in all respects with the Commission's Rules. Such a delay in many instances would have significant consequences.

For example, PRTC has a social responsibility as a government entity to provide local exchange service to all Puerto Rico citizens. Historically, the provision of universal service has been challenging, in large part because of the mountainous terrain spanning the Island of Puerto Rico. To reach citizens in these less accessible areas, PRTC must rely on wireless technologies as an alternative to traditional, costly wireline services.<sup>4</sup>

PRTC's current plans include further deployment of Basic Exchange Telecommunications Radio Service ("BETRS") technology to reach less accessible regions of the island. BETRS technology permits PRTC to offer service to individuals who have never experienced the health, social, and economic benefits of basic telephone service. PRTC forecasts that, within two years, BETRS technology will permit it to offer service for the first time to an estimated 6,000 citizens.

According to the NPRM, however, technical specifications for this and other services would have to be submitted to the Commission and to the Observatory. The applicant may then be required to "resolve or mitigate any potential interference problem with the Arecibo Observatory" and submit an amendment to or modification of the application — even though the original application complies in all respects with the Commission's Rules.

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4. The cost per local loop to install wireline service for these areas can range from \$5,000 to \$10,000, and in some cases may exceed \$15,000. Radio service can be provided to the same areas for less than \$2,600 per subscriber.



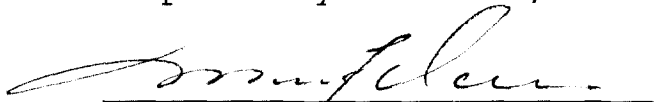
NPRM at ¶ 39. The time it takes to complete the as yet undefined technical modifications and application resubmission process is time that many residents of unserved areas of Puerto Rico will be denied the benefits of elementary communications services.

Similarly, it would be an odd result if a service subscriber could not place an emergency call from a BETRS telephone because the system remained idle during the "technical modification" phase of the Observatory's review. The goals of the Observatory must be balanced against the risk that even one citizen will be unable to use a telephone because of extra-regulatory delays in system approval. Approval of applications under the Commission's Rules for important wireless operations should not be delayed or impeded by a private — and standardless — application review.

#### IV. CONCLUSION

For these reasons, PRTC urges the Commission to decline to establish a radio astronomy coordination zone in Puerto Rico.

Respectfully submitted,



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